

## CLAIMS

What is claimed is:

1. A data presentation system, comprising:  
a decomposition component that automatically segregates at least one information item into a collection of subcomponents relating to the item; and  
an interface component to render the subcomponents in a graphical manner to facilitate user processing and interaction with the information item.
2. The system of claim 1, the interface component renders rich previews of files, and/or other digitally stored items, in the form of interactive graphical representations of computational items or files.
3. The system of claim 1, the decomposition component analyzes properties of the item including at least one of a type of the item, an item structure, an item content, and item metadata about the history of interaction with the item.
4. The system of claim 1, the interface component provides interactive representations allowing users to inspect, probe, and navigate among the subcomponents of the items at a focus of attention before launching a full application.
5. The system of claim 1, the interface component employs interactive graphics to expand the subcomponents into cognitive chunks to be processed by users.
6. The system of claim 1, the interface component includes a preview display enabling users to inspect sets of items, such as text applications, projects, tasks, presentation or graphics applications, and email documents.

7. The system of claim 1, the decomposition component is applied to rich previewing within applications as a process for inspecting and navigating among components of an item being extended or refined.
8. The system of claim 1, the interface component renders data, files, or documents along a 2 or 3 dimensional axis as an icon or display object corresponding to a parameter of the item represented.
9. The system of claim 8, the interface component enables a user to move a cursor along the axis having a preview pane that displays pages corresponding with particular point(s) on the axis.
10. The system of claim 8, the interface component enables a user to open an item at a selected location of interest.
11. The system of claim 10, the interface component displays the subcomponents having a depth display that is indicative of file size or other predetermined metric.
12. The system of claim 1, the interface component includes features to enable hover, dwell, and clicking commands, providing options to zoom in, or change configurations of a visualization in accordance with a user's intentions or inferences about what they desire to see or inspect more closely.
13. The system of claim 1, the interface component includes various dimensions, shapes, user controls, sizing, groupings, content renderings, colors, sounds, images, and other utilities for interacting with the subcomponents of the item.

14. The system of claim 1, the interface component enables a user to observe a last page that was edited.

15. The system of claim 1, further comprising a development environment allowing third parties to design and test different preview variants for use in a more general operating system platform.

16. The system of claim 1, further comprising a set of preference controls that change by type of the item, preview visualizations and access behaviors associated therewith.

17. The system of claim 1, the interface component and the decomposition component can be coupled with an offline or real-time analysis using principles of continual computation, and provide caching of rendered results so as to minimize latencies in real time.

18. The system of claim 1, the interface component provides an exploded view previewer to structure documents in an isometric three-space representation, decomposed into a set of pages comprising the document, sequenced from front to back.

19. The system of claim 18, the documents having one or more pages that are pulled from a stack of page subcomponents.

20. The system of claim 19, the pages are decomposed *via* highlighting into components that were pre-existing and components that were last generated.

21. A computer readable medium having computer readable instructions stored thereon for implementing at least one of the decomposition component and the interface component of claim 1.

22. A system that facilitates information processing, comprising:  
means for automatically analyzing an information item to determine item parameters;  
means for automatically segregating the item into component parts based upon the item parameters;  
means for rendering the component parts on a graphical display.
23. A method to facilitate information item processing, comprising:  
automatically processing a data file to determine one or more parameters;  
automatically separating the data file into sub-elements based upon the parameters;  
automatically displaying the sub-elements at a user interface.
24. The method of claim 1, further comprising automatically displaying previews of the data file in the form of interactive graphical representations.
25. The method of claim 23, the parameters include at least one of a type of the data file, a file structure, a file content, and file metadata relating to interaction with the data file.
26. The method of claim 23, further comprising providing interactive representations allowing users to inspect, probe, and navigate among the sub-elements of the data file at a focus of attention.
27. The method of claim 23, further comprising automatically structuring the data file in an isometric three-space representation, decomposed into a set of pages comprising the data file.

28. A graphical user interface, comprising:  
at least one display object for displaying component portions of a file, the component portions rendered along an axis of display within a graphical user interface;  
and  
at least one user control for retrieving portions of information from the components rendered along the axis of display.
29. The graphical user interface of claim 28, the component portions are associated with at least one of a text document, a presentation document, a graphics document, a sound file, and an email file.
30. The graphical user interface of claim 29, the email file includes indications of people being added or dropped as a conversation has progressed.
31. The graphical user interface of claim 29, the email file changes colors or sounds based upon characteristics of a selected or displayed item.
32. The graphical user interface of claim 29, the email file enables users to navigate directly to the portion of a conversation of interest.
33. The graphical user interface of claim 29, at least two sub-threads or sub-conversations that have been spawned from an initial message.
34. The graphical user interface of claim 29, further comprising a summary component to summarize documents or projects in a dynamic application.
35. The graphical user interface of claim 34, the summary component minimizes an application into a smaller rendering that is replaced at focus by another application that is optionally minimized into an exploded view.

36. The graphical user interface of claim 35, the exploded view is automatically positioned to the side of a screen and minimized per specified preferences
37. The graphical user interface of claim 36, the exploded view is set of messages that a user has opened within a time horizon, cascaded to the side of a task in an order that the user can read the messages.
38. The graphical user interface of claim 37, the messages are automatically resorted into messages by time or priority of the messages, per user settable preferences.
39. The graphical user interface of claim 35, the exploded view allows a user to interact with components of a task separately when they are minimized and to bring to focus selected items.
40. The graphical user interface of claim 35, the exploded view provides access to a gesture that returns a task to an initial rendering when last at focus or return the task a starting point view.
41. The graphical user interface of claim 28, further comprising a metadata schema that captures information including at least one of a time, a nature, and a duration of a user's access.
42. The graphical user interface of claim 41, the schema associated with attentional annotations that are stored as metadata capturing for different parts of a document, how long a user was noted to have viewed or to have actively worked on components of the document.

43. The graphical user interface of claim 41, the schema information is employed in decisions regarding a geometric layout and highlighting of information including an explicit use of metaphors to show regions that have been most attended to or that have been attended to in the lifetime of the document or project.

44. A data presentation system, comprising:  
a decomposition component that automatically segregates information items into a collection of subcomponents relating to a project or task; and  
an interface component to render the subcomponents in a graphical manner to facilitate user processing and interaction with the project or task.

45. The system of claim 44, the interface component provides an exploded view relating to at least one of project access, task management, previewing information, minimization of information, progressive shrinking of information, and a clean-up function for the exploded view.

46. The system of claim 44, further comprising a task manager that enables sets of resources, and associated displays of content to be defined as tasks and manipulated together.

47. The system of claim 46, the task manager enables closing and opening of tasks or projects involving a re-generation of windows with associated content at locations the windows were in before a project was closed.

48. The system of claim 46, the task manager is associated with a task management and recovery system that enables users to define tasks or projects with content from one or more applications.

49. The system of claim 48, the tasks or projects are defined according to at least one of explicitly, based on a task definition procedure *via* an interface, or implicitly by linking tasks to particular applications, or by observing which resources and applications are used together.

50. The system of claim 49, further comprising mixes of implicit or explicit definitions that include allowing a user to invoke a “Save as Project” operation that lists recently touched or opened resources, including windows and content rendered that is currently being displayed on a user’s screen.

51. The system of claim 46, the task manager includes a Save as Project operation that allows a user to add new resources or to remove resources that have been assumed as part of a task.

52. The system of claim 44, the interface component enables for definitions of persistent projects that include one or more computational and associated display resources, that allow users to open, close, and swap projects.

53. The system of claim 44, the interface component provides an option to clean up and redisplay projects that are revisited—or reconfigured and normalized with an explicit “Clean up project,” procedure.



54. The system of claim 44, the interface component provides at least one of the following options:

- a component for viewing windows and other resources associated with a project, when the project is stored for later re-visitation, or is minimized into a small, iconic representation of the multiple windows and other resources associated with the project;

- a component for tasks or projects that allow review of multiple projects by users, when a user desires to view a list of stored projects;

- a component to allow for access to a preview of a project in a manner that allows a user to access a particular portion of the project;

- a component that enables a user to focus one or more full screens of a computer display on a single project by swapping, with simple gestures, the project, along with a geometric layout of resources associated with the project, into view and swapping out or minimizing other resources associated with other tasks or projects; and

- a component to regularize a view on a project when it has been swapped out of focus.